Hardware condition

E-Motor has been built in 2015, tested at AEM, used at RENK for a few hours for testing, repaired by AEM, tested at AEM, and stored at RENK. During the storage years at RENK the rotor has not been turned, although periodically required for the roller bearing condition.

Environmental condition

Application		Main propulsion for vessel		
Ambient air temperature	min. nom.	-2 +45	°C	
Installation altitude	<	1000	masl	
Inclination		*Acc. class notification*		

Motor design

Motor application		EPM		*Electric propulsion motor*
Motor type		ASM		*Asynchronous motor*
Manufacturer/Brand		AEM		*Anhaltische Elektromotorenwerk Dessau GmbH*
Manufacturer type code		WH 630 LL4		
Amount of Winding system		2		
Winding configuration		delta		
Insulation class	class	H		
Utilization of insulation class	class	H		
Duty type (load cycle)		S1		*100% continuous operation*
Rated speed	nom.	1800	rpm	*@ 60 Hz*
Rated mech. power	nom.	3600	kWm	
Direction of rotation view at output flange		CW / CCW		
Rated efficiency	nom.	96,4	%	*Stated in offer*
Vibration class		A		*≤ 2,3 mm/s*
Applicable standards/rules	General	DIN EN 60034		
	Classification	LR		*Lloyd's Register*

Electrical Data				
Rated voltage				
- V1	nom.	690	V	
- V2		660		
Rated current				
- I1	nom.	3402	A	
- I2		3576		
Power factor				
- cos phi 1	nom.	0,9		
- cos phi 2		0,9		
rated mech. power	nom.	3600	kWm	
rated frequency		60	Hz	
Supply type		VFD		*Variable frequency drive*

Note: both winding systems have to be in operation

Mechanical Data				
Type of construction		IM B20		*hoisted feet*
Frame size		630	mm	
Length, overall		2744	mm	
Weight		10.810	kg	
Rotor moment of inertia		144,6	kgm²	
Bearing NDE side		antifriction		*insulated bearing seat*
Bearing DE side		antifriction		*Insulated bearing seat*
Shaft execution		solid shaft		
Enclosure protection				
- motor frame	IP	55		
- main terminal box	IP	55		
- sensor terminal box	IP	55		
- heater terminal box	IP	55		
Painting		RAL 9003		*Maritime / high gloss*

Cooling System			
Cooling type	IC 71 W		*Water jacket cooled with internal fan on rotor*
Max. Cooling water inlet temperature	38	°C	
Cooling water outlet temperature	46	°C	
Cooling water quality	Freshwater		
Cooling water quantity	280	l/min	
Max. amount of glycol	30	%	

Auxiliary Equipment			
Earthing brush	yes	with wear indication	*DE side*
ACH (Anti Condensation Heater)	yes	230 VAC	
Winding temperature sensors	yes	Duplex PT100	*1 per phase (6 total)*
Bearing temperature sensors	yes	Duplex PT100	*1 per bearing (2 total)*
Speed encoder	yes	Incremental encoder	*NDE side; HOG10-DN-1024-R*
Vibration pick-up		SPM nipples	*One for each bearing*

Principle sketch